

**Louisiana Department of Environmental Quality (LDEQ)  
Office of Environmental Services**

**STATEMENT OF BASIS**

**Entergy Louisiana, LLC  
Buras Electric Generating Plant  
Buras, Plaquemines Parish, Louisiana  
Agency Interest Number: 4604  
Activity Number: PER20080001  
Proposed Permit Number: 2240-00032-V1**

**I. APPLICANT**

**Company:**

Entergy Louisiana, LLC  
446 North Blvd.  
L-NORT-3A  
Baton Rouge, LA 70802

**Facility:**

Buras Electric Generating Plant  
1617 River Road, L-NIN-6  
Buras, Plaquemines Parish, Louisiana  
Latitude: 29° 21' 47" Longitude: 89° 32' 18"

**II. FACILITY AND CURRENT PERMIT STATUS**

Buras Electric Generating Plant is a fossil fueled electric generating facility. The facility consists of a turbine and a No. 2 fuel oil storage tank. The turbine burns natural gas and No. 2 fuel oil. Emissions from the turbine are permitted in an alternate operating scenario on a basis of 8760 hr/yr. Emissions were calculated for natural gas (SCN1) and No. 2 fuel oil (SCN2), both on an 8760 hr/yr basis, and the higher emission value of the corresponding pollutant was permitted. This procedure serves to permit the most conservative emission values and allows for operating flexibility.

**III. PROPOSED PROJECT/PERMIT INFORMATION**

**Application**

A permit application and Emission Inventory Questionnaire were submitted by Entergy Louisiana, LLC on November 20, 2008 requesting a Part 70 operating permit renewal. Additional information dated January 7, 2008 was also received.

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**Project**

This permit is the renewal to the Part 70 operating permit No. 2240-00032-V1 issued May 24, 2004.

Increases or decreases in emissions are due to updated AP-42 emission factors and not a project change. The new emissions factors were used in emission calculations using the same throughputs as the current permit. Therefore, PSD does not apply.

In the Buras Title V Renewal Permit Application the Turbine emissions were calculated based on AP-42, Fifth Edition, Volume 1, Stationary Gas Turbines Section 3.1, Table 3.1-1, Supplement F released in April 2000.

The prior Title V Permit emissions were calculated using AP-42 Section 3.1, Stationary Gas Turbines for Electricity Generation, Table 3.1-2 dated 1/95.

**Proposed Permit**

Permit 2240-00032-V1 will be the Part 70 operating permit renewal for the Buras Electric Generating Plant.

**Permitted Air Emissions**

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM <sub>10</sub>	78.55	14.59	- 63.96
SO <sub>2</sub>	650.30	602.61	- 47.69
NO <sub>x</sub>	898.83	1049.92	+ 151.09
CO	149.60	112.18	- 37.42
VOC *	32.73	2.94	- 29.79
TSP	78.55	14.59	- 63.96

**\*VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):**

Pollutant	Before	After	Change
1,3-Butadiene	-	0.019	+ 0.019
Acetaldehyde	-	0.050	+ 0.050
Acrolein	-	0.009	+ 0.009
Benzene	-	0.070	+ 0.070

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**\*VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):**

Pollutant	Before	After	Change
Formaldehyde	-	0.970	+ 0.970
Naphthalene	-	0.040	+ 0.040
Polynuclear Aromatic Hydrocarbons	-	0.048	+0.048
Toluene	-	0.180	+ 0.180
Xylene (mixed isomers)	-	0.090	+0.090
Total		1.476	+ 1.476

Other VOC (TPY): 1.464

**Non-VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):**

Pollutant	Before	After	Change
Arsenic (and compounds)	-	0.013	+ 0.013
Beryllium (Table 51.1)	-	0.001	+ 0.001
Cadmium (and compounds)	-	0.006	+ 0.006
Chromium VI (and compounds)	-	0.013	+ 0.013
Lead compounds	-	0.020	+ 0.020
Manganese (and compounds)	-	0.940	+ 0.940
Mercury (and compounds)	-	0.001	+ 0.001
Nickel (and compounds)	-	0.005	+ 0.005
Selenium (and compounds)	-	0.030	+ 0.030
Total:	-	1.029	+ 1.029

#### IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

**Applicability and Exemptions of Selected Subject Items**

Below are regulations exempted for the selected subject items in the table below. The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit.

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ID No.	Requirement	Note
EQT 1	NSPS Subpart GG – Standards of Performance for Stationary Gas Turbines [40 CFR 60.330]	DOES NOT APPLY. Turbine was constructed before October 3, 1977, and has not been reconstructed or modified.
	Acid Rain Program [40 CFR 72]	DOES NOT APPLY. Commenced operation before November 15, 1990, and does not serve a generator with a nameplate capacity of greater than 25 MW. [40 CFR 72.6(b)(2)]
SCN 1	NSPS Subpart GG – Standards of Performance for Stationary Gas Turbines [40 CFR 60.330]	DOES NOT APPLY. Turbine was constructed before October 3, 1977, and has not been reconstructed or modified.
	Acid Rain Program [40 CFR 72]	DOES NOT APPLY. Commenced operation before November 15, 1990, and does not serve a generator with a nameplate capacity of greater than 25 MW. [40 CFR 72.6(b)(2)]
SCN 2	NSPS Subpart GG – Standards of Performance for Stationary Gas Turbines [40 CFR 60.330]	DOES NOT APPLY. Turbine was constructed before October 3, 1977, and has not been reconstructed or modified.
	Acid Rain Program [40 CFR 72]	DOES NOT APPLY. Commenced operation before November 15, 1990, and does not serve a generator with a nameplate capacity of greater than 25 MW. [40 CFR 72.6(b)(2)]

**Prevention of Significant Deterioration/Nonattainment Review**

This permit was reviewed for compliance with 40 CFR 70 and the Louisiana Air Quality Regulations. Prevention of Significant Deterioration (PSD), New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) do not apply.

This facility is a minor source of toxic air pollutants (TAPs) pursuant to LAC 33:III.Chapter 51.

**MACT Requirements**

The facility is a minor source of TAPs/HAPs. There are no MACT requirements.

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**Air Quality Analysis**

Emissions associated with the proposed renewal and modification were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

**General Condition XVII Activities**

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

**Insignificant Activities**

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

**V. PERMIT SHIELD**

A permit shield Per 40 CFR 60.6(f) and LAC 33:III.507.I has not been requested and is not included in the proposed permit.

**VI. PERIODIC MONITORING**

Buras Electric Generating Plant shall conduct a performance/emissions test on C8 only if operation of turbine in above 14.2 MW for more than 4 hrs – Unit 8 Combustion Turbine (Natural Gas Fired/No. 2 Fuel Oil Fired) due within five years, plus or minus 6 months, of when the previous performance test was performed, or within 180 days after the issuance of a permit renewal, whichever comes later. The stack test's purpose is to demonstrate compliance with the emission limits of this permit. Test methods and procedures shall be in accordance with New Source Performance Standards, 40 CFR 60, Appendix A, Method 7E - Determination of Nitrogen Oxides Emissions from Stationary Sources and Method 20 - Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines. Use alternate stack test methods only with the prior approval of the Office of Environmental Assessment, Environmental Technology Division, Engineering Services. As required by LAC 33:III.913, provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits.

Buras Electric Generating Plant shall submit notification due at least 30 days prior to any LDEQ required performance/emissions test to the Office of Environmental Assessment, to provide the opportunity to conduct a pretest meeting and observe the emission testing.

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Buras Electric Generating Plant shall submit report due within 60 days after performance/emissions test. Submit emissions test results to the Office of Environmental Assessment. The test results summary shall include any necessary conversion into the units of any applicable Standard. (lbs/MMBtu, gr/dscf, lbs SO<sub>2</sub> / ton 100% H<sub>2</sub>SO<sub>4</sub>, Etc.) Plant and in house laboratory data to support production values shall be included. (Example: how many tons of 100% equivalent H<sub>2</sub>SO<sub>4</sub> was being produced) Units tested at less than 95% of permitted maximum capacity shall provide documentation to support compliance at 100% of the permitted maximum capacity.

Buras Electric Generating Plant shall monitor and record the sulfur content of fuel being fired in the turbine supplied from the bulk storage tank. The values shall be determined on each occasion that fuel is transferred to the storage tank from any other source. If fuel supplier certification is used to demonstrate compliance, it shall include the name of the oil supplier and a statement that the oil does not contain sulfur in excess of 0.5 percent by weight

## **VII. GLOSSARY**

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H<sub>2</sub>S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO<sub>x</sub>) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH<sub>4</sub>), Ethane (C<sub>2</sub>H<sub>6</sub>), Carbon Disulfide (CS<sub>2</sub>)

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**VII. GLOSSARY (Cont'd)**

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit:  $\geq 10$  tons per year of any toxic air pollutant;  $\geq 25$  tons of total toxic air pollutants; and  $\geq 100$  tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM<sub>10</sub> – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO<sub>2</sub>) – An oxide of sulfur.

Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.